Why Fly?

Why did some people want to fly across oceans, and balloons around the world?

Introduction: This is a collection of Internet sites for teachers and students exploring the history, careers, personal experiences, and events of flying.

Exploration

Why Do We Explore?
http://ares.jsc.nasa.gov/Education/activities/destmars/destmarsLes6.pdf

The lure of traveling upward toward the heavens begins here:
http://www.hq.nasa.gov/office/pao/History/SP-4201/ch1-1.htm.

If light speed sets the limit, why fly into space?
http://www-istp.gsfc.nasa.gov/stargaze/StarFAQ1.htm#q24

Breaking the Sound Barrier

See a photo of an F18 Breaking the Sound Barrier http://www.datasync.com/~thammack/f18.htm

Check out the National Air & Space Museum – How Things Fly at
http://www.nasm.edu/galleries/gal109/NEWHTF/HTF030.HTM.

Mach 1.0 and Beyond: Saluting Chuck Yeager and the X-1 is available at
http://www.capstonestudio.com/supersonic/, and the Chuck Yeager Photo Gallery is seen at
http://www.hq.nasa.gov/office/pao/History/x1/yeagphoto.html.

Careers and Opportunities

For students between the ages of 8 and 17, an opportunity to become an EAA Young Eagle (chaired by Chuck Yeager) and fly for free with their own personal pilot, exists at http://www.youngeagles.org/. Since the program was launched in July 1992, more than 750,000 young people have received an airplane ride. The site contains information on becoming an EAA Young Eagle, aviation camps, activities, an incredible interactive checklist game, some cool pictures, flight facts, etc.

To see how to become an airline pilot, take a look at http://www.howstuffworks.com/pilot.htm.

Career Information can be found at
http://spacelink.nasa.gov/Instructional.Materials/Curriculum.Support/Careers/.

Careers at NASA and in aviation can be found in educational activities such as "When I Grow Up…" http://spacelink.nasa.gov/Instructional.Materials/On-line.Educational.Activities/Grow/ and Careers in Aviation and Aerodynamics http://wings.avkids.com/Careers/index.html.

A NASA educational poster was developed to encourage young women to pursue careers in mathematics, science, engineering, and technology. It also provides information and activities relating to careers in aerospace. Check it out at
http://spacelink.nasa.gov/Instructional.Materials/Curriculum.Support/Careers/Consider.a.Career.in.Aerospace/

Learning to fly and becoming a pilot is brought to life through a description of what it's all about and a virtual flight at http://www.beapilot.com/indexfl.html.

Female Aviators
http://quest.nasa.gov/space/frontiers/activities/desk/handouts/pdf/litinto.pdf

Hugh L. Dryden's Career in Aviation and Space can be seen at
http://www.dfrc.nasa.gov/History/Publications/Monograph_5/.

Aviation Enthusiasts

For aviation enthusiasts, look over the Aviation Enthusiasts Corner at http://www.aero-web.org/air.htm containing a wealth of information on aircraft, museums, history, air shows, performers, and other links. It has 152 pages containing photographs of many different kinds of aircraft in their Photo Gallery.

To listen to live radio broadcasts from pilots at John F. Kennedy Airport using RealPlayer, go to http://www.aero-web.org/air.htm and click on the link "JFK ATC live" under NY Area.

Interesting Aviators: What Pilots Have to Say

What's the difference in aeronautical and aerospace engineering?
http://quest.nasa.gov/women/archive/6-11-96.fz.txt

Preflight Interview: Curtis Brown
http://spaceflight.nasa.gov/shuttle/archives/sts-103/crew/intbrown.html

Preflight Interview: Sergei Krikalev
http://spaceflight.nasa.gov/station/assembly/flights/2r/intkrikalev.html

*Preflight Interview: Eileen M. Collins
http://spaceflight.nasa.gov/shuttle/archives/sts-93/crew/intcollins.html

Questions answered by the Crew
http://liftoff.msfc.nasa.gov/Shuttle/Astro2/visitor/crew_answers.html

PEOPLE WHO FLY 'EM

http://wings.avkids.com/Careers/fly.html

Captain Tim Lambert - Co-pilot
http://wings.avkids.com/Careers/copilot.html

TSgt. B. K. Taylor - Flight Engineer
http://wings.avkids.com/Careers/flight_engineer.html

Cpt. Mike Glaccum - Flight Instructor
http://wings.avkids.com/Careers/flight_instructor.html

Captain Mike Glaccum - Helicopter Pilot
http://wings.avkids.com/Careers/helicopter_pilot.html

Captain Todd Levine – Mathematician
http://wings.avkids.com/Careers/navigator.html

SSgt. Elvis Rusnak – Loadmaster
http://wings.avkids.com/Careers/loadmaster.html

Cool Events

Aviation World's Fair in 2003 can be anticipated at http://www.larc.nasa.gov/2003/news.html.

Native American Students to Use Mars "Soil" to Grow Spuds in Space
http://sse.jpl.nasa.gov/whatsnew/pr/000512B.html

General Aerodynamics

A short history of flight in an introduction to the aerodynamics of flight is found at
http://history.nasa.gov/SP-367/chapt1.htm.

See How Planes Fly
http://observe.arc.nasa.gov/nasa/education/teach_guide/planes_fly.html

Learning to Fly
http://earthobservatory.nasa.gov/Study/LearningToFly/fly_3.html

How Planes Fly – Quiz
http://observe.arc.nasa.gov/nasa/exhibits/planes/planes_quiz.html

How to Fly a Spacecraft: Online Tutorial Available
http://sse.jpl.nasa.gov/whatsnew/pr/010215A.html

Forces on an Airplane
http://www.grc.nasa.gov/WWW/k-12/airplane/forces.html

Beginner's Guide to Aerodynamics
Why Invent That?
Activity
http://www.grc.nasa.gov/WWW/k-12/BGA/Susan_Eaken/WhyInventThat_act.htm

We Can Fly, You and I: Interdisciplinary Learning Activities
http://www.dfrc.nasa.gov/trc/k4guide/19fly.pdf

Beginner's Guide to Propulsion
Range and Fuel Consumption
http://www.grc.nasa.gov/WWW/K-12/BGP/Devon/range_fuel_ans.htm
http://www.grc.nasa.gov/Other_Groups/K-12/BGP/Devon/range_fuel_act.htm

Beginner's Guide to Propulsion
Range and Fuel Consumption - Worksheet
http://www.grc.nasa.gov/WWW/K-12/BGP/Devon/range_fuel_wks.htm

Aeronautics: An Educator's Guide with Activities in Science, Mathematics, and Technology Education
http://spacelink.nasa.gov/Instructional.Materials/NASA.Educational.Products/Aeronautics/Aeronautics.Educator.Guide.pdf

Welcome to the Beginner's Guide to Aeronautics
http://www.grc.nasa.gov/www/K-12/airplane/index.html

General Information about Aerodynamics
http://www.grc.nasa.gov/WWW/K-12/FoilSim/Manual/fsim0003.htm

Educational Links

A highly useful student site on just about everything on aviation, including educational links, lesson plans, books and more can be found at http://www.ueet.nasa.gov/StudentSite/.

Flight: Interdisciplinary Learning Activities
http://www.dfrc.nasa.gov/trc/k4guide/14Flight.pdf

Aviation for Little Folks
http://spacelink.nasa.gov/Instructional.Materials/On-line.Educational.Activities/Aviation/

NASA's Wind Spacecraft Flies through Earth's Magnetic Tail and Captures Rare Event in Action
http://sse.jpl.nasa.gov/whatsnew/pr/010725C.html

Why Study Microgravity Science?
http://science.nasa.gov//msl1/msl1_why.htm

Why Study Materials Science In Microgravity?
http://liftoff.msfc.nasa.gov/academy/space/MG_MS.HTML

Off to a Flying Start
http://learn.arc.nasa.gov/features/1998/flystart_feat/flystart_feat.html

How High Is It?: An Educator's Guide with Activities Focused on Scale Models of Distances
http://spacelink.nasa.gov/Instructional.Materials/NASA.Educational.Products/How.High.Is.It/How.High.Is.It.Educator.Guide.pdf

What Animals Have Flown in Space: Word Finds
http://lsda.jsc.nasa.gov/kids/what_animals_flown.stm

Cloudy Days are for Reading and Writing: Lesson Plans
http://asd-www.larc.nasa.gov/SCOOL//lesson_plans/Cloudy_Days.html

Mini-Literature Unit
http://quest.nasa.gov/aero/events/regimes/Regimes_of_Flt.-Lit._unit.pdf

The NASA "Why?"Files
http://quest.arc.nasa.gov/ltc/special/whyfiles/whyfiles.html

Beginner's Guide to Propulsion
What Would You Fly?
Activity
http://www.grc.nasa.gov/Other_Groups/K-12/BGP/Robert/flight_act.htm

What Would You Fly?
Answers
http://www.grc.nasa.gov/WWW/K-12/BGP/Robert/flight_ans.htm

WHAT WOULD YOU FLY? WORKSHEET
http://www.grc.nasa.gov/WWW/K-12/BGP/Robert/flight_wks.htm

NASA AeroQuiz
http://www-psao.grc.nasa.gov/psao.quiz/august.98.html

What is the Delta Clipper? (DC-X)
http://www.hq.nasa.gov/office/pao/History/x-33/dcx-faq.htm

New Right Flight
http://www.dfrc.nasa.gov/trc/k4guide/11newflght.pdf

Learning to Fly: The Duck
http://earthobservatory.nasa.gov/Study/LearningToFly/fly_2.html

Is Air Something?
Resource List
http://www.grc.nasa.gov/WWW/K-12/Summer_Training/Elementary97/resources.html

Orbit Drag
http://liftoff.msfc.nasa.gov/Academy/ROCKET_SCI/SHUTTLE/ATTITUDE/DRAG.HTML

NASA Human Space Flight
http://spaceflight.nasa.gov/shuttle/reference/faq/eva.html

Design a Satellite
http://eosweb.larc.nasa.gov/EDDOCS/ila.html

Go Fly a Kite!

Pre-Flight Questions for Kite Flying
http://www.grc.nasa.gov/WWW/OEP/KITE/questions.PDF
http://www.grc.nasa.gov/WWW/K-12/Pre_kite_questions.doc.doc

1900 Wright Kite Activity
http://www.grc.nasa.gov/WWW/Wright/ROGER/1900_questions.htm
How to Build a Sled Kite
http://www.dfrc.nasa.gov/trc/k4guide/10sled.pdf

Note to Educator/Parents: A Topic Hotlist is an organized list of web resources entered on a theme or topic. This collection of exciting Internet sites has information answering the question – *Why did some people want to fly across oceans and balloons around the world?* It is designed for teachers who will use the resources to design and develop a unit on Aviation and Aerodynamics. Students will learn about the endless career possibilities in the field of aviation.

Standards

National Science Education Standards

CONTENT STANDARD B: Physical Science

1. Properties and changes of properties in matter
2. Motions and forces
3. Transfer of energy

CONTENT STANDARD E: Science and Technology

1. Abilities of technological design
2. Understandings about science and technology

CONTENT STANDARD G: History and Nature of Science

1. Science as a human endeavor
2. History of science.

Science Process Skills

Predicting
Observing
Measuring
Making Models

National Standards for School Mathematics

Mathematics as Problem Solving
Measurement
Statistics and Probability

National Educational Technology Standards

Basic Operations and Concepts
Technology Research Tools